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PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

United States Patent and Trademark Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 19 May 1998 (19.05.98)	
International application No. PCT/JP97/03499	**Applicant's or agent's file reference** 97PF160-PCT
International filing date (day/month/year) 01 October 1997 (01.10.97)	**Priority date** (day/month/year) 02 October 1996 (02.10.96)
Applicant SAKAMOTO, Kenji	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

28 April 1998 (28.04.98)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer K. Takeda
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

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8T Translation

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 97PF160-PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP97/03499	International filing date (*day/month/year*) 01 October 1997 (01.10.1997)	Priority date (*day/month/year*) 02 October 1996 (02.10.1996)
International Patent Classification (IPC) or national classification and IPC C07K 14/705, C07K14/72 // A61K 38/10		
Applicant SAKAMOTO, Kenji		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
28 April 1998 (28.04.1998)	12 August 1998 (12.08.1998)
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP97/03499

I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

☒ the international application as originally filed.

☐ the description, pages _____, as originally filed,
pages _____, filed with the demand,
pages _____, filed with the letter of _____,
pages _____, filed with the letter of _____.

☐ the claims, Nos. _____, as originally filed,
Nos. _____, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. _____, filed with the letter of _____,
Nos. _____, filed with the letter of _____.

☐ the drawings, sheets/fig _____, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig _____, filed with the letter of _____,
sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP97/03499

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-5	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

2. Citations and explanations

The subject matters of claims 1-5 do not appear to involve an inventive step in view of document 1 [Daniel R. Nussenzveig et al., "Inhibition of inositol phosphate second messenger formation by intracellular loop one of a human calcitonin receptor," J. Biol. Chem., (1994) 269 (45) p.28123-28129] cited in the ISR.

Document 1 describes that in order to examine the physiological activity of the 16-amino acid sequence fragment of human calcitonin receptor hCTR-2, which is not contained in another human calcitonin receptor hCTR-1, genes of hCTR-1, hCTR-2 and hCTR derivatives partially substituted by sequences of CTRs derived from other mammals (not containing said 16-amino acid sequence fragment) were synthesized to compare the physiological activities of the respective CTRs expressed by gene engineering. It appears to be easy for a person skilled in the art, to prepare said sequence fragment consisting of 16 amino acids by a peptide chemical synthesizing method or gene engineering method well known to a person skilled in the art, and to examine and confirm its physiological activity in more detail.

Furthermore, document 1 suggests that partial peptides having similar physiologically active portions exist also in receptors belonging to GPCR other than CTRs (p.28128, left column, line 5 from bottom, to right column, line 11), and especially suggests that the 29-amino acid sequence fragment identified as a difference between two corticotropin release hormone receptors also may have significant physiological action like the 16-amino acid fragment identified as a difference between hCTR-1 and hCTR-2 (p.28218, right column, lines 11-17). So, it appears to be easy for a person skilled in the art, to identify and appropriately prepare similar peptide fragments also for receptor proteins having plural isoforms other than CTRs, and to examine and confirm their physiological activities.

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date *(day/month/year)*	Filing date *(day/month/year)*	Priority date (valid claim) *(day/month/year)*
JP,8-269091,A	15 October 1996 (15.10.1996)	03 April 1995 (03.04.1995)	

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure *(day/month/year)*	Date of written disclosure referring to non-written disclosure *(day/month/year)*

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The subject matters of the respective claims do not appear to specifically define the physiologically active substances to be searched for or their specific physiological activities.

On the other hand, the specific description of only one searched substance and its physiological activity which can be found in the specification is that the 16-amino acid sequence fragment of 175-190 derived from the longer one of human calcitonin receptors (hereafter written as "hCTRs") shows osteoblast reproduction promoting action, and for glucagon receptors, somatostatin receptors and parathyroid hormone receptors enumerated as other receptors, their respective specific physiological activities are not clarified. In addition, no reasonable ground can be found for the assumption that the probability is high that among the receptors specified in the claims having plural isoforms other than hCTRs of different sizes, the partial peptides due to the difference in length always have a useful physiological activity. Even if the probability is high, it would require more trial and error than anticipated by a person skilled in the art, to find physiological activities that could be predicted and confirmed.

For the above reasons, the method of searching for any optional physiologically active substances in adopting optional receptors, as the subject matters of the claims, is not sufficiently supported by the specification.